

EV355228759  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION FOR LETTERS PATENT

**Media Content Navigation  
Associated Advertising**

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ATTORNEY'S DOCKET NO. MS1-1365US

1 **TECHNICAL FIELD**

2 This invention relates to advertising and, in particular, to media content  
3 navigation associated advertising.  
4

5 **BACKGROUND**

6 Client devices, such as digital video recorders, can be implemented to  
7 receive video content in the form of video on-demand entertainment, such as  
8 movies, and to receive broadcast and/or interactive television entertainment and  
9 information. A digital video recorder includes a hard disk memory so that a  
10 viewer can record the video content and other media content of interest to the  
11 viewer.

12 The advent of on-demand programming, such as with recorded or cached  
13 on-demand and broadcast media content, provides a viewer with the option to  
14 navigate a program with media content navigation features commonly referred to  
15 as "trick modes". These navigation features are typically initiated with a remote  
16 control device and include commands such as fast-forward, skip-ahead in the  
17 program, jump to a next segment, pause the program, and the like.

18 A skip-ahead navigation control input from a viewer, while beneficial when  
19 used to shorten the time for viewing a program, enables the viewer to skip past  
20 advertisements that are broadcast between segments of the program. These  
21 advertisements for products and services are the primary source of revenue for a  
22 broadcaster of the media content. As more viewers attain the ability to skip past  
23 the advertisements in their programming choices, advertisers will be unwilling to  
24 have their advertising messages communicated in the traditional manner.  
25

1 Accordingly, broadcasters need to provide alternate advertisement  
2 presentation techniques to deliver the advertising messages with media content so  
3 that the broadcasters may continue their sponsorship and advertising revenue  
4 model.

## 5 6 **SUMMARY**

7 Media content navigation associated advertising is described herein.

8 In an implementation, media content is rendered which can include  
9 displaying a program for viewing and/or rendering audio. When a media content  
10 navigation input is received, a navigation indicator is displayed and an  
11 advertisement can be rendered while the navigation indicator is displayed. For  
12 example, the advertisement can be rendered as any type of an image, as audio,  
13 and/or any combination thereof.

## 14 15 **BRIEF DESCRIPTION OF THE DRAWINGS**

16 The same numbers are used throughout the drawings to reference like  
17 features and components.

18 Fig. 1 illustrates an exemplary implementation of media content navigation  
19 associated advertising.

20 Fig. 2 further illustrates the exemplary implementation of media content  
21 navigation associated advertising shown in Fig. 1.

22 Fig. 3 illustrates an exemplary implementation of media content navigation  
23 associated advertising maintained within program guide data.

24 Fig. 4 illustrates an exemplary implementation of media content navigation  
25 associated advertising.

1 Fig. 5 is a flow diagram that illustrates an exemplary method for media  
2 content navigation associated advertising.

3 Fig. 6 illustrates various components of an exemplary client device  
4 implemented in a television-based system.

5 Fig. 7 illustrates an exemplary system architecture in which media content  
6 navigation associated advertising can be implemented.

7 Fig. 8 illustrates an exemplary broadcast video distribution architecture in  
8 which media content navigation associated advertising can be implemented.

9  
10 **DETAILED DESCRIPTION**

11 Media content navigation associated advertising systems and methods are  
12 described that provide advertisement presentation techniques to deliver advertising  
13 messages with media content. An advertisement associated with media content,  
14 such as a television program or a music presentation, can be rendered as an image,  
15 as a series or sequence of images, and/or as audio for a time duration during which  
16 a navigation indicator is displayed. Alternatively, an advertisement can be  
17 rendered as an image, as a series or sequence of images, and/or as audio in place  
18 of the navigation indicator, or as an audio or visual component of the navigation  
19 indicator.

20 For example, when a viewer of a television program skips-ahead in the  
21 programming to bypass commercial advertisements that are broadcast between  
22 segments of the program, a navigation indicator is displayed over the program to  
23 indicate that a media content navigation input has been received, and that the  
24 programming is being skipped. A navigation indicator may be displayed over the  
25 program to indicate that the programming has been paused, is being

1 fast-forwarded, is being rewound, and the like. A broadcaster, or content provider,  
2 of the program or music presentation can deliver an advertising message that is  
3 rendered as a logo and/or as audio while the navigation indicator is displayed, or  
4 in place of the navigation indicator. A broadcaster can provide an advertisement  
5 associated with a navigation indicator and/or associated with media content  
6 navigation to identify that a particular program, or media content rendition, is  
7 sponsored by a particular advertiser, or advertisers.

8 The following discussion is directed to audio and/or graphics entertainment  
9 and information systems, as well as television-based entertainment and  
10 information systems, such as a two-way unicast network, interactive television  
11 networks, cable networks, and Web-enabled television networks. Client devices in  
12 such systems range from full-resource clients with substantial memory and  
13 processing resources, such as television-enabled personal computers and television  
14 recorders equipped with hard-disks, to low-resource clients with limited memory  
15 and/or processing resources, such as traditional set-top boxes that are also  
16 implemented to record broadcast programs. While aspects of the described  
17 systems and methods for media content navigation associated advertising can be  
18 implemented in any number of television-based entertainment and information  
19 systems, and within any number and types of client devices, the systems and  
20 methods are described in the context of the following exemplary system  
21 architectures.

22 Fig. 1 illustrates an exemplary implementation 100 of media content  
23 navigation associated advertising. The exemplary implementation 100 is an  
24 example of a media content playback system that includes a client device 102, a  
25 display device 104, and one or more content providers 106 which may be a

1 satellite operator, a network television operator, a cable operator, and the like.  
2 Content providers 106 control the distribution of on-demand and/or broadcast  
3 media content 108 such as movies, programs, commercials, music, and similar  
4 audio, video, and/or image content. Client device 102 receives the media content  
5 108 via various transmission media 110, such as satellite transmission, radio  
6 frequency transmission, cable transmission, and/or via any number of other  
7 transmission media, such as a file transfer protocol over a network (e.g., Internet  
8 or Intranet) and/or data packet communication.

9 Client device 102 can receive the on-demand and/or broadcast media  
10 content, such as television programs, music, and the like, from a headend in a  
11 television-based content distribution system, for example, that provides the media  
12 content as well as program guide data to multiple client devices. Client device  
13 102 can be implemented in any number of embodiments, such as a set-top box, a  
14 digital video recorder (DVR) and playback system, a digital audio recorder and  
15 playback system (e.g., an MP3 player), and as any other type of client device that  
16 may be implemented in an audio, graphic, or television-based entertainment and  
17 information system.

18 In this example, client device 102 includes memory components such as a  
19 recording media 112, an advertisement data store 114, and a cache 116. Client  
20 device 102 also includes one or more tuners 118, a program guide application 120,  
21 a playback application 122, one or more audio components 124, and a graphics  
22 processor 126. Although not shown in this example, client device 102 may be  
23 implemented with any number and combination of differing components as further  
24 described below with reference to Fig. 6.  
25

1 The tuner(s) 118 can each be independently tuned to a different program  
2 channel to receive on-demand and/or broadcast media content 108 (e.g., videos,  
3 programs, music, and the like) which can be recorded and maintained with the  
4 recording media 112 as recorded media content 128. Recording media 112 can be  
5 implemented as any form of memory component, such as disk drive in a digital  
6 video recorder, for example. Further, recording media 112 includes a portion of  
7 memory allocated for buffered media content 130 which is buffered with a  
8 short-term content buffer that maintains segments of stored media received via  
9 transmission media 110. The received media content is buffered to maintain  
10 segments of the media content, such as the most recent thirty minutes, for  
11 example. A short-term content buffer is also referred to as a pause buffer to record  
12 the most recent segment of a paused broadcast program or on-demand video, and  
13 to playback the program or video for viewing from the beginning of the pause  
14 event when a viewer returns to continue watching the program or video.

15 As used herein, "programs" include news shows, sitcoms, comedies,  
16 movies, commercials, talk shows, sporting events, on-demand videos, music,  
17 digital music (e.g., audio only), and any other form of audio, graphic, and/or  
18 television-based entertainment and information. Further, "recorded programs"  
19 include any of the aforementioned "programs" that have been recorded and that  
20 are maintained with a memory component (e.g., recording media 110 in client  
21 device 102) as recorded programs 120, or that are maintained with a remote  
22 program data store (not shown) such as on a video-on-demand server. The  
23 "recorded programs" can also include any of the aforementioned "programs" that  
24 have been recorded and that are maintained at a broadcast center and/or at a  
25

1 headend that distributes the recorded programs to subscriber sites and client  
2 devices.

3 Advertisement data store 114 can be implemented as any form of a memory  
4 component to maintain, or otherwise store, advertisement data received via  
5 transmission media 110 from the one or more content providers 106. Although  
6 shown separately, the advertisement data store 114 can be maintained with the  
7 recording media 112 or as part of program guide application data also maintained  
8 with the recording media 112. For broadcast media content, such as a broadcast  
9 television program, the advertisement data corresponding to the program can be  
10 received as one or more data packets integrated with the live feed, or data stream,  
11 of media content. Alternatively, advertisement data can be received from the  
12 content provider(s) 106 as an independent broadcast or transmission.

13 The stored advertisement data corresponds to advertisements that include  
14 any form of an image, such as a still image, a sequence or series of images, a  
15 graphic, a logo, an animated logo, or a watermark, and any form of audio, such as  
16 music, digital music, an audible message, a generated tone, and/or any  
17 combination of an image and audio. The one or more content providers 106  
18 include a remote advertisement data store 132 (e.g., one or more memory  
19 components not integrated with client device 102). The remote advertisement data  
20 store 132 maintains, or otherwise stores, the advertisement data that corresponds  
21 to the advertisements. The content provider(s) 106 also include an advertisement  
22 distribution application 134 that receives requests for advertisements from client  
23 device 102, and controls the distribution of advertisement data to client device  
24 102.



1       Cache 116 is a memory component which can be implemented as random  
2       access memory (RAM) for faster access during data processing in client device  
3       102. The cache 116 can maintain advertisement(s) that correspond to a program  
4       currently displayed on display device 104. Further, the cache 116 can maintain  
5       any form of an index to advertisement(s) or an advertisement playlist of one or  
6       more advertisements stored in the advertisement data store 116, or stored in the  
7       remote advertisement data store 132 at a content provider 106.

8       Program guide application 120 and playback application 122 can be stored  
9       as computer-executable instructions in a non-volatile memory of client device 102.  
10      Program guide application 120 is implemented to generate a program guide for  
11      display on display device 104. A program guide includes a program broadcast  
12      schedule which displays schedule information to indicate when a particular  
13      program will be broadcast for viewing and on which program channel the program  
14      will be broadcast or received. The program schedule information also associates  
15      each program with a time display that indicates a time of day when the program  
16      will be broadcast for viewing on a particular program channel.

17      Playback application 122 is implemented to control the playback of media  
18      content, such as a program 136 displayed on display device 104 and/or audio  
19      being rendered with an audio playback device, such as speakers 138 in display  
20      device 104. The one or more audio components 124 render an advertisement or  
21      audible portion of an advertisement as audio, such as music or a tone, and/or as an  
22      audible message, on speakers 138. Further, the playback application 122 is  
23      implemented to receive a media content navigation input, such as from a  
24      user-operated remote control device 140, to generate a navigation indicator 142 for  
25      display over, or on, the program 136, and to obtain an advertisement 144 to be

1 rendered while the navigation indicator 142 is displayed. Alternatively, the  
2 advertisement 144 can be displayed in place of the navigation indicator 142, or as  
3 a visual component of the navigation indicator 142.

4 A media content navigation input can include a command to play media  
5 content (e.g., start a program for viewing or begin an audio rendition), skip-ahead  
6 or skip-back in the media content, pause or stop the media content, and any other  
7 similar media content navigation command. A navigation indicator is displayed  
8 that corresponds to the particular media content navigation input. For example,  
9 navigation indicator 142 is displayed on display device 104 and corresponds to a  
10 skip-ahead command in the program 136. Any different form or style of  
11 navigation indicator can be displayed that corresponds to each of the different  
12 media content navigation inputs.

13 The playback application 122 can obtain an advertisement, such as the logo  
14 advertisement 144 and/or an audio message, from the advertisement data store  
15 114, the cache 116, and/or from the remote advertisement data store 132 in content  
16 provider 106. An advertisement associated with a particular program can also be  
17 maintained with the program guide data corresponding to the program. Although  
18 the program guide application 120 and the playback application 122 are each  
19 illustrated and described as single applications, program guide application 120 and  
20 playback application 122 can each be implemented as several component  
21 applications distributed to each perform one or more functions in a media content  
22 playback system. Further, although illustrated and described as two separate  
23 applications, the program guide application 120 and the playback application 122  
24 can be implemented together as a single application.

1 The graphics processor 126 processes media content for display, such as  
2 program 136 displayed on display device 104. The graphics processor 126 also  
3 processes navigation indicator data to display navigation indicators on display  
4 device 104, and processes advertisement data to display graphic advertisements on  
5 the display device 104, such as logo advertisement 144, or an animated logo  
6 advertisement. A program can be processed for display as a digital MPEG image,  
7 for example, and the navigation indicators and graphic advertisements can be  
8 processed for display as on-screen images over the MPEG image. The graphics  
9 processor 126 can receive program MPEG frames from frame buffers and can  
10 receive on-screen image data for navigation indicators and advertisement logos  
11 from on-screen display buffers.

12 An advertisement associated with media content can be rendered (e.g., a  
13 graphic or logo displayed over a program and/or rendered as audio) for a time  
14 duration when a navigation indicator is displayed, or for some other definable time  
15 duration. In this example, advertisement logo 144 is displayed with navigation  
16 indicator 142 while a viewer of program 136 skips-ahead past regular broadcast  
17 advertisements that are broadcast between segments of the program. Further, an  
18 advertisement associated with a navigation indicator can be related to the regular  
19 broadcast advertisement that has been skipped over which the viewer can then  
20 back-up to view if the advertised message is of interest to the viewer.

21 With media content navigation associated advertising, a content provider, or  
22 broadcaster, can still deliver advertising messages with media content when  
23 advertisements that are broadcast for viewing with a program, for example, are  
24 skipped over by a viewer of the program. Further, an advertisement associated  
25

1 with a navigation indicator still provides the notion that a particular program, or  
2 media content, is sponsored by an advertiser, or advertisers.

3 Fig. 2 further illustrates aspects of the exemplary implementation 100 of  
4 media content navigation associated advertising shown in Fig. 1. The  
5 advertisement data store 114 in client device 102 includes advertisements 200(1),  
6 200(2), ..., 200(N) which are received from a content provider 106. The same  
7 advertisements 200 can be located in the remote advertisement data store 132 in  
8 content provider 106. Advertisement 200(1) is an example of a logo  
9 advertisement that can be displayed with a navigation indicator, or in place of a  
10 navigation indicator, on a display device when a media content navigation input is  
11 received, such as logo advertisement 144 (Fig. 1). Advertisement 200(2) is an  
12 example of an audio advertisement that can be rendered with an audio playback  
13 device while a navigation indicator is displayed, or when the media content is  
14 navigated. Advertisement 200(N) is an example of an advertisement that includes  
15 both a graphic component (e.g., a logo) and an audio component. As described  
16 above, an advertisement can include any combination of an image such as a still  
17 image, a sequence or series of images, a graphic, a logo, an animated logo, or a  
18 watermark, and/or any form of audio, such as music, digital music, an audible  
19 message, a generated tone, and the like.

20 The cache 116 in client device 102 includes one or more indexes 202 to the  
21 advertisements 200 in the advertisement data store 114 and/or in the remote  
22 advertisement data store 132 in content provider 106. When a program 208 is  
23 distributed as media content 108 from content provider 106 to client device 102,  
24 an index 202 can be maintained in the cache 116 such that when a media content  
25 navigation input is received, the playback application 122 can utilize the index 202

1 to obtain an advertisement 200 that corresponds to the particular program 208. An  
2 index 202 to an advertisement can also be received and utilized to obtain an  
3 up-to-date advertisement from the remote advertisement data store 132 in content  
4 provider 106. Although not shown, the cache 116 can also maintain an  
5 advertisement 200 such that the playback application 122 can obtain the  
6 advertisement directly from the cache 116 when a media content navigation input  
7 is received.

8 The cache 116 also includes an advertisement playlist 204 that includes  
9 playlists 206(1), 206(2), ..., 206(M). A playlist 206 can correspond to a program  
10 208 maintained for distribution as media content 108 at content provider 106.  
11 When a particular program 208 is distributed as media content 108 from content  
12 provider 106 to client device 102, a corresponding playlist 206 can be maintained  
13 in the cache 116 such that when a media content navigation input is received, the  
14 playback application 122 can utilize the playlist 206 to obtain advertisements 200  
15 that correspond to the program 208. For example, when a first media content  
16 navigation input is received, a first advertisement 200(1) (e.g., a logo  
17 advertisement) corresponding to the first designated advertisement in playlist  
18 206(1) can be displayed. When a second media content navigation input is  
19 received, a second advertisement 200(2) (e.g., an audio advertisement)  
20 corresponding to the second designated advertisement in playlist 206(1) can be  
21 rendered as audio. A playlist 206 can designate a particular order in which  
22 different advertisements 200 are to be rendered, or a playlist such as 206(M) can  
23 designate that the same advertisement be rendered each time a media content  
24 navigation input is received.  
25

1 Fig. 3 illustrates program guide data 300 that includes media content  
2 associated advertisements. Program guide data 300 includes schedule information  
3 to indicate when any of the programs 302 will be broadcast for viewing and on  
4 which of the corresponding program channels 304 the programs 302 will be  
5 broadcast and/or received. The program schedule information also associates each  
6 program 302 with a time of day 306 when a particular program will be broadcast  
7 for viewing on a corresponding program channel 304.

8 In this example, program guide data 300 includes embedded, or integrated,  
9 advertisement data for advertisements that correspond to a particular program 302.  
10 For example, a logo advertisement 308 corresponds to a program "Morning News"  
11 scheduled for broadcast on program channel six (6) at 8:30 a.m., an audio  
12 advertisement 310 corresponds to a program "Pre-Game Show" scheduled for  
13 broadcast on program channel thirty-three (33) at 8:30 a.m., and an advertisement  
14 312 that includes both a graphic component and an audio component corresponds  
15 to a program "College Basketball" scheduled for broadcast on program channel  
16 thirty-three (33) at 9:30 a.m.

17 Although the program guide data 300 only includes a few program  
18 channels (e.g., 2, 4, 6, ... 33), the program guide data 300 can typically include  
19 programming information for any number of program channel numbers and  
20 associated program listings. Further, although the programs 302 are each shown to  
21 have only one associated advertisement, such as embedded advertisements 308,  
22 310, and 312, each of the programs 302 can include any number and type of  
23 associated advertisement. For example, a program 302 can include an embedded  
24 advertisement playlist 206 (Fig. 2), or a reference to an advertisement playlist that  
25 associates multiple advertisements with a program.

1        When a program 302 is distributed as media content 108 (Fig. 1) from  
2        content provider 106 to client device 102, and when a media content navigation  
3        input is received, the playback application 122 can obtain an advertisement such  
4        as 308, 310, and 312 from the program guide data 300 that corresponds to a  
5        program being displayed for viewing. Further, the playback application can obtain  
6        an advertisement corresponding to a particular program based on any one or  
7        combination of a time of the day, a type of the program, and a program channel on  
8        which the program is broadcast. In an event that a program is recorded and  
9        maintained as recorded media content 128 in recording media 112 (Fig. 1), the  
10       program guide data 300 with the associated advertisement data corresponding to  
11       the program can also be recorded so that the programming associated advertising  
12       can be recalled when the program is viewed from the recording.

13       Fig. 4 illustrates an exemplary implementation 400 of media content  
14       navigation associated advertising. The exemplary implementation 400 is an  
15       example of a media content playback system implemented as an audio playback  
16       device 402 (optionally portable), such as an MP3 player or similar device. The  
17       audio playback device 402 includes an integrated display 404, an audio rendering  
18       device 406 (e.g., a speaker), and selectable controls 408 that are user-selectable to  
19       control the operation of device 402 and to control rendering audio content.

20       In this example, audio playback device 402 includes memory components  
21       such as a recording media 410, an advertisement data store 412, and a cache 414.  
22       Audio playback device 402 also includes one or more processors 416, a playback  
23       application 418, one or more audio components 420, and a graphics processor 422.  
24       The operational aspects of most of these components in relation to media content  
25       navigation associated advertising are described above with reference to the

1 exemplary implementation 100 (Fig. 1). Although not shown in this example,  
2 audio playback device 402 may also be implemented with any number and  
3 combination of differing components as described above with reference to the  
4 client device 102 (Fig. 1) and as further described below with reference to the  
5 exemplary client device 602 (Fig. 6).

6 The processor(s) 416 (e.g., any of microprocessors, controllers, and the  
7 like) process various instructions to control the operation of audio playback device  
8 402. Recording media 410 can be implemented as any form of fixed or removable  
9 memory component to record and maintain audio content as recorded media  
10 content 424. The audio content can be received as music, for example, from the  
11 content provider(s) 106 via various detachable transmission media 426, such as  
12 satellite transmission, radio frequency transmission, cable transmission, and/or via  
13 any number of other transmission media.

14 Advertisement data store 412 can be implemented as any form of a memory  
15 component to maintain, or otherwise store, advertisement data received via  
16 transmission media 426 from the one or more content providers 106. For  
17 broadcast media content, such as a broadcast music, the advertisement data  
18 corresponding to the audio can be received as one or more data packets integrated  
19 with the live feed, or data stream, of media content. Alternatively, advertisement  
20 data can be received from the content provider(s) 106 as an independent broadcast  
21 or transmission. Cache 414 is a memory component which can be implemented to  
22 maintain advertisement(s) that correspond to audio currently rendered with the  
23 audio playback device 402. Further, the cache 414 can maintain any form of an  
24 index to advertisement(s) or an advertisement playlist of one or more  
25 advertisements stored in the advertisement data store 412.



1 Playback application 418 can be stored as computer-executable instructions  
2 in a non-volatile memory of audio playback device 402, and can be executed with  
3 the one or more processors 416. Playback application 418 is implemented to  
4 control the playback of media content, such as music, an audible message, and the  
5 like. The one or more audio components 420 render the media content and an  
6 advertisement or an audible portion of an advertisement as audio on speaker 406.  
7 Further, the playback application 418 is implemented to receive a media content  
8 navigation input, such as from a user-selectable control 408, to generate a  
9 navigation indicator 428 for display on the integrated display 404, and to obtain an  
10 advertisement 430 to be rendered while the navigation indicator 428 is displayed,  
11 or in place of the navigation indicator 428. A media content navigation input can  
12 be received as a command to play music, skip-ahead in the music, skip-back in the  
13 music, pause the music, stop the music, record a live broadcast, and as any other  
14 audio or media content navigation input.

15 The playback application 418 can obtain an advertisement, such as the logo  
16 advertisement 430 and/or an audio message, from the advertisement data store 412  
17 and/or the cache 414. Although the playback application 418 is illustrated and  
18 described as a single application, playback application 418 can be implemented as  
19 several component applications distributed to each perform one or more functions  
20 in a media content playback system. The graphics processor 422 processes  
21 navigation indicator data to display navigation indicators on the display 404, such  
22 as navigation indicator 428, and further processes advertisement data to display  
23 graphic advertisements on the display 404, such as logo advertisement 430.

24 Methods for media content navigation associated advertising may be  
25 described in the general context of computer executable instructions. Generally,

1 computer executable instructions include routines, programs, objects, components,  
2 data structures, procedures, and the like that perform particular functions or  
3 implement particular abstract data types. The methods may also be practiced in a  
4 distributed computing environment where functions are performed by remote  
5 processing devices that are linked through a communications network. In a  
6 distributed computing environment, computer executable instructions may be  
7 located in both local and remote computer storage media, including memory  
8 storage devices.

9 Fig. 5 illustrates a method 500 for media content navigation associated  
10 advertising. The order in which the method is described is not intended to be  
11 construed as a limitation, and any number of the described method blocks can be  
12 combined in any order to implement the method. Furthermore, the method can be  
13 implemented in any suitable hardware, software, firmware, or combination  
14 thereof.

15 At block 502, a media content playback system receives media content.  
16 For example, client device 102 (Fig. 1) and audio playback device 402 (Fig. 4)  
17 receives image and/or audio media content from one or more content providers  
18 106. At block 504 (optionally), advertisement(s) are received from a content  
19 provider. For example, client device 102 and audio playback device 402 can  
20 receive advertisement data corresponding to one or more advertisements from the  
21 content provider(s) 106. The advertisement data can be received with the media  
22 content and/or can be received as an independent broadcast or transmission.

23 At block 506 (optionally), the advertisement(s) are maintained, or  
24 otherwise stored. For example, client device 102 maintains or stores the  
25 advertisements in advertisement data store 114, or caches the advertisements in

1 cache 116. Similarly, audio playback device 402 maintains or stores the  
2 advertisements in advertisement data store 412, or caches the advertisements in  
3 cache 414.

4 At block 508, an index corresponding to an advertisement, and/or a playlist  
5 corresponding to one or more advertisements, is received. At block 510, the index  
6 and/or playlist is cached, or otherwise maintained. For example, client device 102  
7 and audio playback device 402 can receive an index 202 (Fig. 2) and/or an  
8 advertisement playlist 204, and cache the index 202 and/or playlist 204 in cache  
9 116 and 414, respectively.

10 At block 512, the media content is rendered. Rendering media content  
11 includes displaying a program on a display device, such as program 136 (Fig. 1)  
12 displayed on display device 104. Rendering media content also includes  
13 generating audio with one or more audio components, such as with speakers 138  
14 and audio components 124 in client device 102, and with speaker 406 and audio  
15 components 420 in audio playback device 402.

16 At block 514, a media content navigation input is received. For example,  
17 playback application 122 (Fig. 1) in client device 102 or playback application 418  
18 (Fig. 4) in audio playback device 402 can receive a media content navigation  
19 input, such as a command to play media content (e.g., start a program for viewing  
20 or begin an audio rendition), skip-ahead or skip-back in the media content, pause  
21 or stop the media content, and any other similar media content navigation  
22 command.

23 At block 516, a navigation indicator corresponding to the media content  
24 navigation input is displayed. For example, navigation indicator 142 (Fig. 1) is  
25 displayed over the program 136 on display device 104 and corresponds to a

1 skip-ahead command of the program. Similarly, navigation indicator 428 (Fig. 4)  
2 is displayed on display 404 of the audio playback device 402 and corresponds to a  
3 skip-ahead command of the audio content.

4 At block 518, an advertisement is obtained. For example, playback  
5 application 122 (Fig. 1) in client device 102 can obtain an advertisement 200  
6 (Fig. 2) from cache 116, from advertisement data store 114, or from the remote  
7 advertisement data store 132 in content provider 106. Further, the playback  
8 application 122 can utilize an index 202 or a playlist 204 to obtain the  
9 advertisement. The advertisement can be obtained according to an order  
10 designated by the playlist, or based on a time of day, a type of the program, a  
11 program channel on which the program is broadcast, and/or any combination  
12 thereof. Similarly, playback application 418 (Fig. 4) in audio playback device 402  
13 can obtain an advertisement 200 from cache 414 and/or from advertisement data  
14 store 412.

15 At block 520, the advertisement is rendered while the navigation indicator  
16 is displayed. Alternatively, the advertisement is rendered in place of the  
17 navigation indicator at block 522. The advertisement can be rendered as any form  
18 of an image, such as a still image, a sequence or series of images, a graphic, a  
19 logo, an animated logo, or a watermark, and/or as any form of audio, such as  
20 music, digital music, an audible message, a generated tone, and/or any  
21 combination of an image and audio. For example, advertisement 144 is displayed  
22 over the program 136 on display device 104 while the navigation indicator 142 is  
23 displayed.

24 Fig. 6 illustrates a television-based system 600 that includes an exemplary  
25 client device 602 which includes components to implement media content

1 navigation associated advertising. Exemplary client device 602 can be  
2 implemented as client device 102 (Fig. 1) and as the exemplary audio playback  
3 device 402 (Fig. 4) with any number and combination of the differing components  
4 described herein. Exemplary client device 602 can also be implemented as a  
5 set-top box, a satellite receiver, a TV recorder with a hard disk, a digital video  
6 recorder (DVR) and playback system, a game console, an audio recording and  
7 playback system, an information appliance, and as any number of similar  
8 embodiments. System 600 also includes a display device 604 to display  
9 on-demand and broadcast programs, as well as navigation indicators and  
10 associated advertising.

11 Client device 602 includes one or more tuners 606 which are representative  
12 of one or more in-band tuners that tune to various frequencies or channels to  
13 receive audio signals and/or television signals, as well as an out-of-band tuner that  
14 tunes to the program channel over which program data is broadcast to client  
15 device 602. Client device 602 also includes one or more processors 608 (e.g., any  
16 of microprocessors, controllers, and the like) which process various instructions to  
17 control the operation of client device 602 and to communicate with other  
18 electronic and computing devices.

19 Client device 602 can be implemented with one or more memory  
20 components, examples of which include a random access memory (RAM) 610,  
21 mass storage media 612, a disk drive 614, and a non-volatile memory 616 (e.g.,  
22 any one or more of a read-only memory (ROM), flash memory, EPROM,  
23 EEPROM, etc.). Disk drive 614 can include any type of magnetic or optical  
24 storage device, such as a hard disk drive, a magnetic tape, a recordable and/or  
25 rewriteable compact disc (CD), a DVD, a DVD+RW, and the like. The one or

1 more memory components provide data storage mechanisms to store various  
2 information and/or data such as received media content, program guide data 618,  
3 recorded programs 620, configuration information for client device 602, graphical  
4 user interface information, and any other types of information and data related to  
5 operational aspects of client device 602. Alternative implementations of client  
6 device 602 can include a range of processing and memory capabilities, and may  
7 include any number of differing memory components than those illustrated in  
8 Fig. 6. For example, full-resource clients can be implemented with substantial  
9 memory and processing resources, whereas low-resource clients may have limited  
10 processing and memory capabilities.

11 An operating system 622 and one or more application programs 624 (such  
12 as playback application 122 shown in Fig. 1 and playback application 418 shown  
13 in Fig. 4, for example) can be stored in non-volatile memory 616 and executed on  
14 processor(s) 608 to provide a runtime environment. A runtime environment  
15 facilitates extensibility of client device 602 by allowing various interfaces to be  
16 defined that, in turn, allow application programs 624 to interact with client device  
17 602. The application programs 624 can include a browser to browse the Web (e.g.,  
18 "World Wide Web"), an email program to facilitate electronic mail, and any  
19 number of other application programs.

20 A program guide application 626 that executes on processor(s) 608 is also  
21 stored in non-volatile memory 616 and is implemented to process the program  
22 guide data 618. Program guide application 626 generates the program guides  
23 which enable a viewer to navigate through an onscreen display and locate  
24 broadcast programs, recorded programs, video on-demand programs and movies,  
25 interactive game selections, and other media access information or content of

1 interest to the viewer. With program guide application 626, the television viewer  
2 can look at schedules of current and future programming, set reminders for  
3 upcoming programs, and/or enter instructions to record one or more programs.

4 Client device 602 further includes one or more communication interfaces  
5 628 and a PSTN, DSL, cable, or other type of modem 630. The communication  
6 interface(s) 628 can be implemented as any one or more of a serial and/or parallel  
7 interface, as a wireless interface, any type of network interface, and as any other  
8 type of communication interface. A wireless interface enables client device 602 to  
9 receive control input commands 632 and other information from a user-operated  
10 input device, such as from a remote control device 634 or from another infrared  
11 (IR), 802.11, Bluetooth, or similar RF input device. Input devices can include a  
12 wireless keyboard or another handheld input device 636 such as a personal digital  
13 assistant (PDA), handheld computer, wireless phone, or the like.

14 A network interface provides a connection between client device 602 and a  
15 data communication network which allows other electronic and computing devices  
16 coupled to a common data communication network to communicate information to  
17 client device 602 via the network. Similarly, a serial and/or parallel interface  
18 provides a data communication path directly between client device 602 and  
19 another electronic or computing device to interact and communicate with the other  
20 device via any number of the various communication links. Modem 630  
21 facilitates client device 602 communication with other electronic and computing  
22 devices via a conventional telephone line, a DSL connection, cable, and/or other  
23 type of connection.

24 Client device 602 also includes a content processor 638 which can include a  
25 video decoder and/or additional processors to receive, process, and decode

1 broadcast video signals and program data, such as NTSC, PAL, SECAM, or other  
2 television system analog video signals, as well as DVB, ATSC, or other television  
3 system digital video signals. For example, content processor 638 can include an  
4 MPEG-2 or MPEG-4 (Moving Pictures Experts Group) decoder that decodes  
5 MPEG-encoded video content and/or image data. The systems described herein  
6 can be implemented for any type of video encoding format as well as for data  
7 and/or content streams that are not encoded.

8 Typically, video content and program data includes video data and  
9 corresponding audio data. Content processor 638 generates video and/or display  
10 content that is formatted for display on display device 604, and generates decoded  
11 audio data that is formatted for presentation by a presentation device, such as one  
12 or more speakers (not shown) in display device 604. Content processor 638 can  
13 include a display controller (not shown) that processes the video and/or display  
14 content to display corresponding images on display device 604. A display  
15 controller can be implemented as a graphics processor, microcontroller, integrated  
16 circuit, and/or similar video processing component to process the images.

17 Client device 602 also includes an audio and/or video output 640 that  
18 provides the audio, video, and/or display signals to television 604 or to other  
19 devices that process and/or display, or otherwise render, the audio and video data.  
20 Video signals and audio signals can be communicated from client device 602 to  
21 television 604 via an RF (radio frequency) link, S-video link, composite video  
22 link, component video link, analog audio connection, or other similar  
23 communication links.

24 Although shown separately, some of the components of client device 602  
25 may be implemented in an application specific integrated circuit (ASIC).



1 Additionally, a system bus (not shown) typically connects the various components  
2 within client device 602. A system bus can be implemented as one or more of any  
3 of several types of bus structures, including a memory bus or memory controller, a  
4 peripheral bus, an accelerated graphics port, or a local bus using any of a variety  
5 of bus architectures. By way of example, such architectures can include an  
6 Industry Standard Architecture (ISA) bus, a Micro Channel Architecture (MCA)  
7 bus, an Enhanced ISA (EISA) bus, a Video Electronics Standards Association  
8 (VESA) local bus, and a Peripheral Component Interconnects (PCI) bus also  
9 known as a Mezzanine bus.

10 Fig. 7 illustrates an exemplary system architecture 700 in which media  
11 content navigation associated advertising can be implemented. System 700  
12 facilitates distribution of content and program guide data to multiple viewers. The  
13 system 700 includes one or more content providers 702, one or more program  
14 guide data providers 704, a content distribution system 706, and multiple client  
15 devices 708(1), 708(2), ..., 708(N) coupled to the content distribution system 706  
16 via a broadcast network 710.

17 A content provider 702 can be implemented as a satellite operator, a  
18 network television operator, a cable operator, and the like. A content provider 702  
19 includes a content server 712 to control distribution of stored content 714, such as  
20 movies, television programs, commercials, music, and similar audio, video, and/or  
21 image content from content provider 702 to the content distribution system 706.  
22 Additionally, content server 712 controls distribution of live content (e.g., content  
23 that was not previously stored, such as live feeds) and/or content stored at other  
24 locations to the content distribution system 706.

1 A program guide data provider 704 includes a program guide database 716  
2 and a program guide data server 718. The program guide database 716 stores  
3 electronic files of program guide data which is used to generate an electronic or  
4 interactive program guide (or, "program guide"). Program guide data can include  
5 a program title, program broadcast day(s) to identify which days of the week the  
6 program will be broadcast, program start times(s) to identify a time that the  
7 program will be broadcast on the particular day or days of the week, and a  
8 program category. A program category describes the genre of a program and  
9 categorizes it as a particular program type. For example, a program can be  
10 categorized as a movie, a comedy, a sporting event, a news program, a sitcom, a  
11 talk show, or as any number of other category descriptions. Program guide data  
12 can also include program ratings, characters, descriptions, actor names, station  
13 identifiers, channel identifiers, other schedule information, and so on.  
14 Additionally, program guide data may include video on-demand content  
15 information, such as movie schedules, as well as application information, such as  
16 for interactive games, and other programming information that may be of interest  
17 to a viewer.

18 The program guide data server 718 processes the program guide data prior  
19 to distribution to generate a published version of the program guide data which  
20 can contain programming information for all broadcast channels and on-demand  
21 content listings for one or more days. The processing may involve any number of  
22 techniques to reduce, modify, or enhance the program data such as data  
23 compression, format modification, and the like. The program guide data server  
24 718 controls distribution of the published version of the program guide data from a  
25 program guide data provider 704 to the content distribution system 706 using, for

1 example, a file transfer protocol (FTP) over a TCP/IP network (e.g., Internet or  
2 Intranet). Further, the published version of the program guide data can be  
3 transmitted from program data provider 704 via a satellite and the content  
4 distribution system 706 directly to a client device 708.

5 Content distribution system 706 is representative of a headend service  
6 and/or program data center that provides program guide data, as well as content, to  
7 multiple subscribers (e.g., client devices 708). Each content distribution system  
8 706 may receive a different version of the program guide data that takes into  
9 account different programming preferences and lineups. The program guide data  
10 server 718 can create different versions of the program guide data that includes  
11 those channels of relevance to respective headend services, and the content  
12 distribution system 706 transmits the program guide data to the multiple client  
13 devices 708. In one implementation, for example, content distribution system 706  
14 utilizes a carousel file system to repeatedly broadcast the program guide data over  
15 an out-of-band (OOB) channel to the client devices 708. Alternatively, the  
16 multiple client devices 708 can receive standard, or uniform, program guide data  
17 and individually determine which program guide data to display based on the  
18 associated headend service.

19 Content distribution system 706 includes a broadcast transmitter 720, one  
20 or more content processing applications 722, and one or more program guide data  
21 processing applications 724. Broadcast transmitter 720 broadcasts signals, such as  
22 cable television signals, across broadcast network 710. Broadcast network 710  
23 can include a cable television network, RF, microwave, satellite, and/or data  
24 network, such as the Internet, and may also include wired or wireless transmission  
25 media using any broadcast format or broadcast protocol. Additionally, broadcast

1 network 710 can be any type of network, using any type of network topology and  
2 any network communication protocol, and can be represented or otherwise  
3 implemented as a combination of two or more networks.

4 A content processing application 722 processes the content received from a  
5 content provider 702 prior to transmitting the content across broadcast network  
6 710. Similarly, a program guide data processing application 724 processes the  
7 program guide data received from a program guide data provider 704 prior to  
8 transmitting the program guide data across broadcast network 710. A particular  
9 content processing application 722 may encode, or otherwise process, the received  
10 content into a format that is understood by the multiple client devices 708 which  
11 are coupled to broadcast network 710. Although Fig. 7 shows a single content  
12 provider 702, a single program guide data provider 704, and a single content  
13 distribution system 706, exemplary system 700 can include any number of content  
14 providers and/or program guide data providers coupled to any number of content  
15 distribution systems.

16 Client devices 708 can be implemented in a number of ways. For example,  
17 a client device 708(1) receives broadcast content from a satellite-based transmitter  
18 via a satellite dish 726. Client device 708(1) is also referred to as a set-top box or  
19 a satellite receiving device. Client device 708(1) is coupled to a television 728(1)  
20 for presenting the content received by the client device (e.g., audio data, video  
21 data, and image data), as well as a graphical user interface. A particular client  
22 device 708 can be coupled to any number of televisions 728 and/or similar devices  
23 that can be implemented to display or otherwise render content. Similarly, any  
24 number of client devices 708 can be coupled to a single television 728.  
25

1 Client device 708(2) is also coupled to receive broadcast content from  
2 broadcast network 710 and provide the received content to associated television  
3 728(2). Client device 708(N) is an example of a combination television 730 and  
4 integrated set-top box 732. In this example, the various components and  
5 functionality of the set-top box are integrated into the television, rather than using  
6 two separate devices. The set-top box integrated into the television can receive  
7 broadcast signals via a satellite dish (similar to satellite dish 726) and/or via  
8 broadcast network 710. In alternate implementations, client devices 708 may  
9 receive broadcast signals via the Internet or any other broadcast medium, such as  
10 back channel 734 which can be implemented as an Internet protocol (IP)  
11 connection or as other protocol connections using a modem connection and  
12 conventional telephone line, for example. Further, back channel 734 provides an  
13 alternate communication link between each of the client devices 708, and between  
14 the client devices 708 and the content distribution system 706.

15 The exemplary system 700 also includes stored on-demand content 736,  
16 such as video on-demand (VOD) movie content. The stored on-demand content  
17 736 can be viewed with a television 728 via a client device 708 through an  
18 onscreen movie guide, for example, and a viewer can enter instructions to stream a  
19 particular movie, or other stored content, to a corresponding client device 708.

20 Fig. 8 illustrates an exemplary broadcast video distribution architecture 800  
21 in which media content navigation associated advertising can be implemented.  
22 One or more broadcast centers 802 provide broadcast content to one or more  
23 headends 804 via one or more transmission media 806. Each broadcast center 802  
24 and headend 804 interfaces with the various transmission media 806, such as a  
25 satellite transmission, radio frequency transmission, cable transmission, and/or via

1 any number of other transmission media. A broadcast center 802 can be  
2 implemented as a satellite operator, a network television operator, a cable operator,  
3 and the like.

4 A headend 804 includes one or more program data stores 808 to record the  
5 broadcast content that is received via a transmission media 806. The broadcast  
6 content can be stored, or otherwise recorded, while the broadcast content is in a  
7 compressed format, for example, in order to facilitate the ongoing storage of the  
8 content over days, weeks, or even indefinitely. The compression format may  
9 comport with a Moving Pictures Expert Group (MPEG) algorithm, such as  
10 MPEG-2, MPEG-4, and so forth. Other compression technologies may  
11 alternatively be employed, such as Microsoft Windows® Media, Advanced Simple  
12 Profile (ASP), Cintak, and the like.

13 A headend 804 and a hub 810 communicate across a network 812 which  
14 can be implemented as a fiber ring that may operate with a packet-based protocol,  
15 such as Internet protocol (IP), IP over asynchronous transfer mode (ATM), and  
16 other protocols. Packets can therefore be communicated between headend 804  
17 and hub 810 which includes a cable modem termination system 814 for  
18 terminating communications from downstream cable modems. Alternatively,  
19 headend 804 may include a cable modem termination system 816 to terminate the  
20 cable modem communications. Although only one hub 810 is illustrated in  
21 architecture 800, a headend 804 can distribute broadcast content to multiple hubs  
22 810 via network 812.

23 Hub 810 distributes the broadcast content over fiber lines 818 to one or  
24 more fiber nodes 820(1), 820(2) ... 820(N). Each fiber node 820 has one or more  
25 coaxial lines 822 over which the broadcast content is output, and each coaxial line

1 822 includes coaxial line drops to multiple subscriber sites 824(1), 824(2), ...  
2 824(N). Each subscriber site 824 includes one or more client devices 826(1),  
3 826(2), ... 826(N), respectively. Subscriber sites 824 can be homes, businesses,  
4 and the like with each subscriber site 824 including multiple client devices 826  
5 that are each directly or indirectly interfacing with one or more of coaxial lines  
6 822. Client devices 826 may be computers, set-top boxes of varying capabilities,  
7 hand-held and/or portable electronic devices, digital televisions, and so forth.  
8 Each client device 826 may include an integrated video screen or may be coupled  
9 to a video screen.

10 Although media content navigation associated advertising has been  
11 described in language specific to structural features and/or methods, it is to be  
12 understood that the subject of the appended claims is not necessarily limited to the  
13 specific features or methods described. Rather, the specific features and methods  
14 are disclosed as exemplary implementations of media content navigation  
15 associated advertising.